



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,655	09/12/2003	Chang-Seok Geum	041993-5220	1984
9629	7590	10/08/2004		
			EXAMINER	
			CLEVELAND, MICHAEL B	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 10/08/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/660,655	GEUM, CHANG-SEOK	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael Cleveland	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 16 August 2004.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.  
 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 11-17 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 12 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>091203</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group II, claims 11-17 in the reply filed on 8/16/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 1-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/16/2004.

### ***Information Disclosure Statement***

3. The information disclosure statement filed 9/12/2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. (JP 9-5762 is absent.)
4. The information disclosure statement filed 9/12/2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. Applicant has stated that the Abstract of each reference is the statement of relevance, but no abstract for JP 5-127179 or JP 2000-310784 is present.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1762

6. Claims 11-12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carr et al. (U.S. Patent 6,391,378, hereafter '378) in view of Yamada et al. (U.S. Patent 6,001,203, hereafter '203) and Levey et al. (U.S. patent 5,409,545, hereafter '545).

'378 teaches a method for controlling a gap between a nozzle and a substrate, comprising:

lowering a body supporting a syringe having a nozzle at one end until the nozzle contacts a substrate;

determining an initial value between the nozzle and the substrate by having the nozzle contact the substrate (col. 2, lines 1-44);

lifting up the body, so that the nozzle is isolated from the substrate (col. 1, lines 40-45); and lowering the body, so that the nozzle reaches a desirable height from the initial value (col. , lines 40-45).

'378 does not explicitly teach that the dispenser is for making a liquid crystal display (LCD) panel. However, '378 teaches that its method may be generically used to set the distance between the nozzle and substrate in all dispensing systems (col. 5, lines 36-47). '203 teaches that nozzles may be used to deposit liquid crystal material or sealing material in LCDs (col. 1, lines 1-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of '378 to have set the distance between the nozzle and substrate when forming an LCD such as that of '203 with a reasonable expectation of success because '203 teaches that nozzles are used to deposit layers of LCDs and because '378 teaches a suitable method of setting an appropriate distance between a nozzle and substrate for dispensing systems. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

'378 teaches that the nozzle may be operated by servo motors, but does not teach that a contact type switch is turned on or off when the nozzle is isolated from the substrate. However, '545 teaches the use of contact switches in order to provide feedback when servo motors have brought something into a desired position. '378 teaches that nozzle contact with the substrate is a desired starting position. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a contact type switch to have provided

Art Unit: 1762

feedback when reaching the position with a reasonable expectation of success because ‘545 teaches that contact switches provide feedback to servo motors.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr ‘378 in view of Yamada ‘203 and Levey ‘545 as applied to claim 11 above, and further in view of Kitamura et al. (U.S Patent 6,139,639, hereafter ‘639).

‘378, ‘203, and ‘545 are discussed above, but do not explicitly teach that the dispensing distance between nozzle and substrate is 40 microns. ‘639 teaches that the dispensing distance between the substrate and nozzle for dispensing materials onto LCD substrates is desirably 10-1000 microns (col. 14, lines 7-30). The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr ‘378 in view of Yamada ‘203 and Levey ‘545 as applied to claim 11 above, and further in view of Kitahara et al. (U.S Patent 6,595,819, hereafter ‘819).

‘378, ‘203, and ‘545 are discussed above, but do not teach using a laser displacement sensor. ‘819 teaches that laser displacement sensors may be used in aligning substrates and nozzles for making display devices (col. 14, lines 7-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a laser displacement sensor in the device of ‘378 in order to aid in aligning the substrates with a reasonable expectation of success because ‘819 teaches that it is a suitable tool for aiding in such alignment.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr ‘378 in view of Yamada ‘203 and Levey ‘545 as applied to claim 11 above, and further in view of Vinouze et al. (U.S Patent 5,431,771, hereafter ‘771).

‘378, ‘203, and ‘545 are discussed above, but do not teach using a silver paste. ‘771 teaches that electrode layers of LCDs may be applied using dispensing nozzles (col. 3, lines 3-

Art Unit: 1762

14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of '378 to have set the distance between the nozzle and substrate when forming a silver paste layer of an LCD such as that of '771 with a reasonable expectation of success because '771 teaches that nozzles are used to deposit electrode layers of LCDs and because '378 teaches a suitable method of setting an appropriate distance between a nozzle and substrate for dispensing systems. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness.

*Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

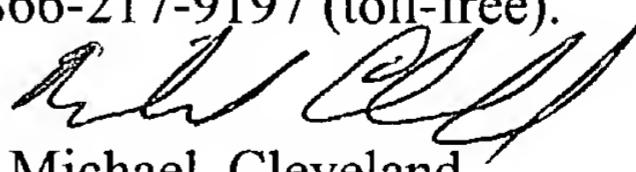
### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Izumi (U.S. Patent 6,144,438) is cited for its teaching of nozzle-substrate distances (Table 3).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Cleveland  
Examiner  
Art Unit 1762